

AP201500-2

**AIR QUALITY ASSESSMENT  
FOR  
LYNX CAT MOUNTAIN QUARRY  
MINE AND RECLAMATION PLAN**

**MATCON CORPORATION  
CA Mine ID# 90-36-0049**

Update

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**February 2, 2015**

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## **INTRODUCTION**

The Lynx Cat Mountain Quarry is an existing vested mine that operated under the authority of Reclamation Plan 90M-010 under the name of Gray Granite Quarry and ownership of the Matcon Corporation as approved by San Bernardino County (County) on June 28, 1990. The mine is designated by the State of California as CA Mine ID #90-36-0049. Reclamation Plan No. 90M-010 has an expiration date of December 31, 2020; however its current status per the State Surface Mining and Reclamation Act (SMARA) and the County, acting as the local lead agency for the implementation of SMARA, is "abandoned."

The purpose of the Mine and Reclamation Plan application is to request authorization to re-open and allow temporary use of the quarry to provide PCC aggregates, landscape/hardscape and fill material exclusively for construction of the State Route 58 Hinkley Expressway Project (SR-58 Project). Caltrans has selected Skanska USA for the construction of the SR-58 Project. Skanska has contacted Matcon Corporation, owners of the Lynx Cat Mountain Mine, to obtain the required construction materials for the SR-58 Project.

Skanska's Caltrans contract requires Skanska and its sub-contractors to comply with numerous air quality control conditions and measures as well as those of the Mojave Desert Air Quality Management District (MDAQMD) as listed within the State Route 58 Hinkley Expressway Project Final Environmental Impact Report/Environmental Impact Statement (FEIR/EIS) (Caltrans June 2013). The mine site operations will be required to comply with these conditions and measures which are provided in Section 3 below. The SR-58 Hinkley Expressway Project FEIR/FEIS concluded that construction impacts to air quality are short-term in duration and, therefore, would not result in adverse or long-term conditions.

The Mine and Reclamation Plan application requests authorization to conduct mining and processing operations for a limited period of up to two years, the term of the SR-58 Project, or upon extraction of 4.5 million tons of material, whichever comes first. Reclamation of the mine would commence immediately upon expiration of the permit or a mine reclamation plan revision would be submitted for continued use of the site resources into the future.

The Lynx Cat Mountain Quarry is located approximately 5 miles northwest of Hinkley and is the nearest aggregate source for the SR-58 Project. Use of this site would contribute to Caltrans stated efforts to reduce project impacts, when feasible. Use of this site as a source for material would result in a reduction in miles traveled by approximately 66% as compared to the nearest alternative source while realizing additional reductions in traffic and congestion impacts and

substantially reduced air quality impacts from diesel exhaust, dust, and greenhouse gases. [The optional site which would be available to the contractor would be the Caltrans Opah Material Site, which has been cleared environmentally and is approximately 16 miles northeast from Hinkley, off of I-15 (page 2-57, SR-58 Hinkley Expressway Project FEIR/FEIS, Caltrans June 2013).]

## **1.0 AIR QUALITY ASSESSMENT**

The site is in the Mojave Desert Air Basin (MDAB), an approximate 21,000 square mile area under the jurisdiction of the MDAQMD. The MDAB encompasses the desert portion of San Bernardino County and the Palo Verde Valley in eastern Riverside County. The MDAQMD has jurisdiction over that portion of the MDAB within San Bernardino County that includes the project area.

The MDAQMD has local regulatory review and primary permitting and enforcement authority over potential stationary sources of air pollution within the Mojave Desert portions of San Bernardino County, including all cities and towns. The EPA and CARB serve as technical review and advisory agencies, providing technical advice and guidance when necessary. MDAQMD regulates emissions from stationary sources through the permitting process and requires permits to Construct/Operate for all stationary equipment with the potential to release air contaminants. The portable processing plant and power generator sets will be required to obtain operating permits or maintain statewide portable equipment registration as applicable.

### **General Description of Mine and Processing Operations**

The mining operation will be permitted to provide material exclusively for the Caltrans SR-58 project under a contract with Skanska. The contract quantity is 4.5 million tons over the project duration of 16 months. Construction is scheduled to begin April 1, 2015 for 9 months in calendar year 2015 and continuing for 7 months in calendar year 2016 through July 31, 2016. Four (4) million tons of fill material will be loaded by excavators and loaders directly onto street legal 25-ton haul trucks for export to the construction alignment. 0.5 million tons of material will be transported by 35-ton off-road haul trucks to be processed on-site through the portable crushing and screening plant. Approximately 20% of the material will be washed. After processing, the sized material will be transported off-site by street legal 25-ton haul trucks.

### **Operational Assumptions for Air Quality Assessment**

4.5 million tons of aggregate material over 16 months  
281,250 tons/month  
Approximately 11,250 tons/day (based on 25 working days per month)  
4.0 million tons loaded and transported directly off-site  
0.5 million tons processed on-site and then trucked off-site

## Hours of Operation

The proposed hours of operation are scheduled to be 7 days/week and 24 hours/day. It is assumed that excavation and hauling operations will typically be limited to 16 hours/day and 6 days/week per week. The processing plant would operate approximately 8 hours/day.

## Schedule

April 1, 2015 Contract Start Date  
Aug 1, 2016 Contract Completion Date  
16 months = Term of Contract

Based on 6 days/week with limited operations on Sundays and holidays, there are approximately a total of 380 working days; 200 working days in calendar year 2015 and 180 working days in calendar year 2016.

## Mine Equipment

Typical mobile equipment types and numbers were provided by the contractors and the applicant and are listed in Table 1. These are estimated equipment numbers and usage.

**Table 1**  
**Equipment List (Typical)**

Number	Description
5	Loaders
4-5	Excavators
2	Off-Road Trucks
2	Dozers
1	Grader
1	Water Pull or Truck
1	Service Truck
1 - 2	Water tanks, portable above-ground
1	Processing plant (portable) 2 crushers, 4 screens, conveyors, and stackers
2-3	Generator sets
2-3	Drill rigs

## Trucking

At 25 tons per truck – 180,000 total truck trips are required.  
For 16 months, this is 11,250 truck trips or loads/month.

For the air quality assessment, a higher level of 12,500 tons/day and 500 truck trips/day was utilized based on 380 working days and some days when production will be higher due to construction phasing. The assessment of the trucks transporting material to the construction

alignment is included in the SR-58 Hinkley Expressway Project FEIR/FEIS evaluation. The FEIR/FEIS states that “the construction contractor will be responsible to determine which ‘borrow/fill’ material sites to use for imported material, and to ensure any site is environmentally cleared and, if applicable, permitted. Import material specifics and locations would be part of the final design phase for this project, and incorporated into the Plans, Specifications, and Estimates section of the project contract.”

Therefore, as part of the Caltrans contract, Skanska will be required to implement air quality control conditions and measures as well as those of the MDAQMD as listed within the State Route 58 Hinkley Expressway Project FEIR/FEIS.

## 2.0 AIR QUALITY EVALUATION

### Thresholds of Significance

Air quality analyses for the proposed project have been conducted in accordance with the California Environmental Quality Act (CEQA) and Federal Conformity Guidelines (MDAQMD 2011) and the South Coast Air Quality Management District (SCAQMD) Air Quality Handbook with revisions through 2014. The MDAQMD has established the following significant annual emissions thresholds for determining whether the impacts from a project would be considered significant per CEQA:

#### Annual Emissions Thresholds of Significance

- Greenhouse Gases (CO<sub>2</sub>e) - 100,000 tons
- Carbon monoxide (CO) – 100 tons
- Oxides of Nitrogen (NO<sub>x</sub>) – 25 tons
- Volatile Organic Compounds (VOC) – 25 tons
- Oxides of Sulfur (SO<sub>x</sub>) – 25 tons
- Particulate matter (PM<sub>10</sub>) – 15 tons
- Particulate matter (PM<sub>2.5</sub>) – 15 tons

Source: CEQA and Federal Conformity Guidelines (MDAQMD 2011)

### County of San Bernardino “Greenhouse Gas Emissions Reduction Plan” January 2012

According to the County of San Bernardino “Greenhouse Gas Emissions (GHG) Reduction Plan adopted December 2011 (County GHG Plan),” measurable reductions of GHG emissions will be achieved through the County’s GHG Development Review Process (DRP) by applying appropriate reduction requirements as part of the discretionary approval of new development projects. A review screening guidance standard of 3,000 MTCO<sub>2</sub>e is applied to all land uses when the County is the lead agency. Projects that exceed 3,000 MTCO<sub>2</sub>e per year of GHG emissions are required to calculate GHG reduction measures and the determination of a significant findings using the County’s GHG Plan Screening Tables. Projects that garner 100 or more points on the Screening Tables do not require quantification of project specific GHG emissions.

The County may also consider the MDAQMD guidance and incorporate all applicable standards. The MDAQMD significance threshold for GHGs (100,000 tons/yr), while higher than the County's GHG Plan of 3,000 MTCO<sub>2</sub>e/yr is more applicable to this type of project. Upon review of the Screening Tables, it was determined that the GHG reduction measures listed are related to typical long-term residential, commercial, and industrial structural development and the project activities do not apply. The MDAQMD states that, in general, emissions less than those listed in their CEQA and Federal Conformity Guidelines will result in less than significant impact on air quality. Thus, regional impacts from a project that adds emissions to the air basin in quantities which are less than those listed above would be less than cumulatively considerable.

## 2.1 OPERATIONS CRITERIA POLLUTANTS EVALUATION

For the existing project, onsite processing, mobile criteria, and dust emissions were screened using the MDAQMD Emissions Inventory Guidance; SCAQMD "Air Quality Handbook"; Emission Factors for On-Road Heavy-Duty Diesel Trucks (EMFAC 2012); SCAQMD Off-Road Mobile Source Emissions Factors (years 2015 and 2016); AP-42 Chapters 11.19 and 13.2.2; and SCAQMD Particulate Matter Emission Factors.

Operational emissions were analyzed with the following assumptions:

- Annual emissions were estimated based on the working days per calendar years 2015 and 2016.
- Mining equipment would operate 16 hours/day, 6 days/week; 200 days in 2015; and 180 days in 2016 which may be exceeded on occasion due to construction demand.
- Process plant operations and one related loader will operate during the same time period but for an average of 8 hours/day which may be exceeded on occasion due to construction demand.
- Off-road 44-ton capacity haul trucks will transport material to the plant 8 hours/day - 37 trips per day.
- On-road 25-ton haul truck trips will average 500 per operating day which may be exceeded on occasion due to construction demand.
- MDAQMD process plant dust control requirements and Rule 403.1 for fugitive dust control measures are included in the emissions' estimates.
- Air and dust control measures required by Caltrans per contract conditions with Skanska (and also required for mine operations under contract with Skanska) and the State Route-58 Hinkley Expressway Project FEIR/FEIS (Caltrans June 2013) are incorporated.

The emissions calculations for the operational parameters for proposed project are provided in Appendix A in Tables A1 through A5. The estimated air pollutant emissions and their significance as compared to the thresholds above are summarized in Table 2. As shown, the net increase in air emissions from the proposed project are less than the annual thresholds of

significance. With implementation of the MDAQMD rules and Caltrans conditions listed below, air quality impacts are expected to be less than significant.

**Table 2**  
**Lynx Cat Mountain Quarry**  
**State Route 58 Hinkley Expressway Project**  
**Estimated Air Pollutant Emissions and Significance**  
**Tons/Year**

Equipment / Plant	ROG		NO <sub>x</sub>		CO		PM <sub>10</sub>		PM <sub>2.5</sub>	
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
Mine Site Equipment Exhaust	2.55	2.30	16.42	14.78	11.00	9.89	0.95	0.86	0.88	0.79
Off-Road Haul Trucks	0.31	0.28	1.73	1.56	0.96	0.86	0.08 <sup>1</sup> 0.84 <sup>2</sup>	0.075 <sup>1</sup> 0.75 <sup>2</sup>	0.08 <sup>1</sup> 0.03 <sup>2</sup>	0.07 <sup>1</sup> 0.02 <sup>2</sup>
Processing Plant	---	---	---	---	---	---	0.49	0.44	0.15	0.13
On-Road trucks on-site (street legal)	0.02	0.02	0.21	0.19	0.08	0.07	0.01 <sup>1</sup> 2.1 <sup>2</sup>	0.01 <sup>1</sup> 1.9 <sup>2</sup>	0.01 <sup>1</sup> 0.4 <sup>2</sup>	0.01 <sup>1</sup> 0.4 <sup>2</sup>
Fugitive Dust (loading, unloading, & stockpiles)	---	---	---	---	---	---	0.24	0.22	0.05	0.045
<b>Emissions Totals</b>	<b>2.88</b>	<b>2.6</b>	<b>18.36</b>	<b>16.53</b>	<b>12.04</b>	<b>10.82</b>	<b>4.71</b>	<b>4.26</b>	<b>1.6</b>	<b>1.47</b>
MDAQMD CEQA Thresholds (Tons/year)	25		25		100		15		15	
<b>Significant</b>	<b>No</b>		<b>No</b>		<b>No</b>		<b>No</b>		<b>No</b>	

Scenario Year for Emissions: 2015 & 2016

Emission Sources: SCAQMD EMFAC2007 Emission Factors for off-road mobile and on-road mobile vehicles; Particulate Matter Emission Factors SCAQMD, July 2010); AP-42 Section 13.2.2 EPA, November 2006).

**Notes/Assumptions:**

Based on mining 14,100 tons/day; 12,500 tons per day shipped directly off-site with no processing; and 1,600 tons per day processing at plant.

Operations based on 200 days in 2015 and 180 days in 2016 per contract schedule.

Off-road haul trucks estimated at 44 ton capacity and 37 trips/day at average distance of 0.2 miles per round trip.

Unpaved road dust emission factor of 0.8 lbs/mile with 75% water spray and at least a speed limit of 25 mph control per SCAQMD 2010 and AP-42 Chapter 13.2.2.

<sup>1</sup> Exhaust emissions

<sup>2</sup> Road dust emissions.

Dust related PM<sub>2.5</sub> = 0.208 of PM<sub>10</sub> (CEIDARS List).



### 3.0 CONDITIONS AND MEASURES TO CONTROL AIR EMISSIONS

Within the SR-58 Hinkley Expressway Project FEIR/FEIS (page 3.14-15, Caltrans, June 2013), Caltrans states that “Construction related emissions would result from earthmoving activities and the use of heavy equipment, as well as land clearing, ground excavation, cut-and-fill operations, and the construction of roadways. Dust emissions would vary substantially from day to day, depending on the level of activity, the specific operations, and the prevailing weather. A major portion of dust emissions for the project would likely be caused by construction traffic on temporary construction roads. Caltrans’ policy is to reduce construction-period emissions by the greatest extent feasible and requires implementation of effective and comprehensive avoidance and minimization measures.”

Caltrans determined that the “construction impacts to air quality are short-term in duration and, therefore, would not result in adverse or long-term conditions” (page 3.14-15 of the FEIR/FEIS).

#### Exhaust Emissions

The proposed project would conform to Caltrans construction requirements, as specified in the Caltrans Standard Specifications, Section 14-9.02 (Air Pollution Control): “The Contractor shall comply with all air pollution control ordinances and statutes which apply to any work performed pursuant to the contract, including any air pollution control rules, regulations, ordinances and statutes, specified in Section 11017 of the Government Code.” In addition, the truck and equipment fleets must be in compliance with all existing and future CARB and MDAQMD regulations related to diesel-fueled trucks and equipment, which may include among others:

- (1) meeting more stringent emission standards;
- (2) retrofitting existing engines with particulate traps;
- (3) use of low sulfur fuel; and
- (4) use of alternative fuels or equipment.

Implementation of exhaust emission control measures outlined below and as numbered within the State Route-58 Hinkley Expressway Project FEIR/FEIS would avoid and/or minimize any impacts on air quality.

- AQ-1: Caltrans will require implementation of effective and comprehensive avoidance and minimization measures, as detailed in Caltrans’ Standard Specifications, Sections 14-9.02 (Air Pollution Control) and 14-9.03 (Dust Control), and MDAQMD Rule 403.2 (Fugitive Dust Control).

Measures to reduce exhaust emissions specified in Section 14-9.02 (Air Pollution Control) may include but are not limited to the following:

- AQ-1a: General contractors shall maintain and operate construction equipment so as to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues would have their engines turned off when not in use, to reduce vehicle emissions. Construction emissions should be phased and scheduled to avoid emissions peaks and discontinued during second-stage smog alerts.

- AQ-1b: All equipment shall be properly tuned and maintained in accordance with manufacturer’s specifications.
- AQ-1c: Use electricity from power poles, rather than temporary diesel or gasoline powered generators if or where feasible.
- AQ-1d: Use on-site mobile equipment powered by alternative fuel sources (i.e., methanol, natural gas, propane, or butane) as feasible.
- AQ-1e: Develop a construction traffic management plan that includes, but is not limited to: (1) consolidating truck deliveries; (2) providing a rideshare or shuttle service for construction workers; and (3) providing dedicated turn lanes for movement of construction trucks and equipment on-and off-site.

### **Particulate (Dust) Emissions**

The proposed project would conform to Caltrans’ construction requirements, as specified in Caltrans Standard Specifications, Section 7-1.01F (Air Pollution Control). Avoidance and minimization measures have been incorporated into the proposed project to ensure that state and federal ambient air quality standards for PM10 will not be exceeded due to man-made sources of fugitive dust within the MDPA and the control measures contained in the MDPA Federal PM10 Attainment Plan will be implemented.

The portable aggregate processing plant and all portable power sources on-site must be permitted to operate, maintained and operated per permit conditions, and annually renew permits from the MDAQMD and/or the California Air Resources Board. At a minimum, the processing plant must include water sprays for dust suppression and other measures as specified in their permit conditions.

The MDAQMD has adopted Rule 403.2 (Fugitive Dust Control for the Mojave Desert Planning Area [MDPA]). The proposed project would be required to implement control measures for each source of PM10 emissions, as specified in the rule. The project would also need to conform to Caltrans Standard Specifications, Section 14-9.03 (Dust Control). Implementation of these measures would avoid and/or minimize any impacts to air quality.

- AQ-1f: Prevent and alleviate dust by applying water, dust palliative, or both by covering active and inactive stockpiles as stipulated under Sections 13-4.03C(3) and 14-9.02 of Caltrans Standard Specifications. Application of water would be in accordance with Section 17 of the Standard Specifications. For compacting embankment material, subbase, base, and surfacing material and for dust control, apply water with the appropriate equipment to ensure the uniform application of water. Application of dust palliative under would be in accordance with Section 18. Monitor air quality and provide dust control measures to limit dust below nuisance levels as described under Section 14-9 of the Standard Specifications. Dust control binders or dust palliative must be either miscible in water or a material that is directly applied to the surface without mixing with water.

Measures to reduce particulate emissions specified in MDAQMD Rule 403.2 (Fugitive Dust Control) include the following.

The owner or operator of any construction source shall:

- AQ-1g: Use periodic watering for short-term stabilization of disturbed surface area to minimize visible fugitive dust emissions. For purposes of this rule, use of a water truck to maintain moist disturbed surfaces and actively spread water during visible dusting episodes shall be considered sufficient to maintain compliance;
- AQ-1h: Take actions sufficient to prevent project-related trackout onto paved surfaces;
- AQ-1i: Cover or otherwise stabilize aggregate loads (i.e., loads to remain 6 inches from the upper edge of the container area) to avoid dust emissions from product transport trucks in compliance with California Vehicle Code No. 23114;
- AQ-1j: Stabilize graded site surfaces upon completion of grading when subsequent development is delayed or expected to be delayed more than 30 days, except when such a delay is due to precipitation that dampens the disturbed surface sufficiently to eliminate visible fugitive dust emissions;
- AQ-1k: Clean-up project-related trackout or spills on publicly maintained paved surfaces within 24 hours;
- AQ-1l: Reduce nonessential earth-moving activity under high wind conditions. For purposes of this rule, a reduction in earth-moving activity when visible dusting occurs from moist and dry surfaces due to wind erosion shall be considered sufficient to maintain compliance; and
- AQ-1m: Limit speeds on unpaved internal haul roads to 15 mph.

### **Diesel Particulate-Related Health Risk during Construction**

MDAQMD does not consider diesel-related cancer risks from construction equipment to be an issue due to the short-term nature of construction activities. Construction activities associated with the highway and mine project would be short-term in nature. The assessment of cancer risk is typically based on a 70-year exposure period. Because exposure to diesel exhaust would be well below the 70-year exposure period and the lack of any nearby sensitive receptors, the proposed project is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature of highway construction.

### **Global Warming – Greenhouse Gases**

The effects of GHG on global climate change are cumulative and extremely long-term, not short-term or local. The GHG emissions associated with the construction phase of the highway and related operation of the mine site are limited to less than two years.

Project-related GHG emissions from on-site equipment, power generators, and trucks are shown in Table 3. The CEQA threshold of 100,000 MTCO<sub>2</sub>e per year has been utilized by the MDAQMD as potentially significant to global warming. Utilizing this threshold, proposed operations of the mine project would be well below the threshold. In addition, the GHG emissions generated from project activities are less than the County's GHG Plan Screening Guidance Standard of 3,000 MTCO<sub>2</sub>E. The mitigation measures listed as AQ-1a through AQ-1e will also reduce operational GHG emissions.

**Table 3**  
**Greenhouse Gas**  
**Operational Annual Emissions (MTCO<sub>2</sub>e)**

Source/Phase	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
Onsite Truck Trips	39	0.02	negl
Onsite Equipment	2,877	5.25	negl
Total Per Year	2,916	5.27	negl
<b>Total MTCO<sub>2</sub>e</b>	<b>2,921</b>		
MDAQMD Threshold	100,000		
<b>Significant</b>	No		
County's GHG Plan	3,000		
<b>Significant</b>	No		

In a broader sense, the proposed project is providing the aggregate material to construct the improvements for the SR-58 Hinkley Expressway Project. The purpose of the project is to relieve traffic congestion, improve operation efficiency and safety conditions, correct structural deficiencies, and meet the needs for regional transportation in accordance with regional plans. To the extent that a project relieves congestion by enhancing operations and improving travel times, GHG emissions, particularly CO<sub>2</sub>, may be reduced. Neither the proposed mine project or the SR-58 improvement project would generate new long-term vehicular traffic trips since it would not construct new homes or businesses. GHG impacts for the short-term operation of the proposed mine site is deemed to cause a less than significant impact to climate change.

#### 4.0 CONCLUSIONS

The proposed operation of the Lynx Cat Mountain Mine for a period of two years is directly linked with the SR-58 Hinkley Expressway Project with respect to the duration of the highway construction and providing the project with its required aggregate quantities. This air quality assessment estimated the on-site exhaust and dust emissions from the excavation, removal, and processing of the aggregate materials and found that these annual emissions would be less than the MDAQMD significance levels with the implementation of Caltrans emissions' conditions and measures. These conditions and measures are included in this report and are implemented contractually with the mine operator as a sub-consultant to Skanska. With implementation of these conditions and measures and the short-term duration of the mine operations, the air quality impacts would be expected to be less than significant.

In addition, the GHG emissions for the short-term operation of the proposed mine site are deemed to cause a less than significant impact to climate change.